



CHATBOT FOR COLLEGE WEBSITE USING PYTHON



MINI PROJECT REPORT

Submitted by

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**M.KUMARASAMY COLLEGE OF ENGINEERING
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MASTER OF COMPUTER APPLICATIONS

MINI PROJECT WORK

AUGUST 2020

This is to certify that the project entitled
CHATBOT FOR COLLEGE WEBSITE USING PYTHON

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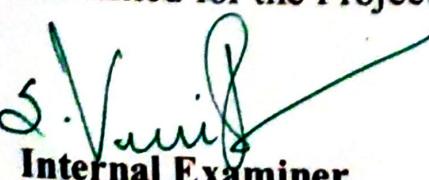
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ABSTRACT

The Web application “**CHATBOT FOR COLLEGE WEBSITE USING PYTHON**” is designed by python using JSON Database structure to retrieve the data. The project is implemented mainly to solve the doubts and queries of both students and parents. A chatbot suits the user needs and requirements. Chat bots are usually a stateful services, remembering previous commands (and perhaps even conversation) in order to provide functionality. When chat bot technology is integrated with popular web services it can be utilized securely by an even larger audience .The project provides user by voice recognition feature and have basic interaction with them just like a human. And, provides text-based user interface ,allowing user to type commands as well as receive the texts. It can answer the questions asked by the user. The questions could be about college details.

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LIST OF ABBREVIATIONS

AI	- Artificial intelligence
AIML	- Artificial Intelligence Modelling Language
NumPy	- Numerical Python
API	- application program interface
NLP	- Natural language processing
GUI	- Graphical User Interface

CHAPTER 2

SYSTEM ANALYSIS

2.1 EXISTING SYSTEM

- Greetings or Basic interaction with the user
- Students need to manually visit to the college to get their queries answered by the college help desk
- This process consumes lot of time as well as money as the customer needed to visit college if its miles away from home

Disadvantages

- Traditionally, the chat bot system is not known to people who are not more into the technology.
- Even if there exist a chat bot system, it is not much accurate in proving the answer or solutions.
- Students need to manually visit to the college to get their queries answered by the college help desk.
- This process consumes lot of time as well as money as the customer needed to visit college if its miles away from home.
- Also, this process may lead to communication gap between student and college.

2.2 PROPOSED SYSTEM

- This System is a web application which provides answer to the query of the student.
- Students just have to query through the bot which is used for chatting.
- Students can chat using any format there is no specific format the user has to follow.
- The System uses built in Natural Language Processing to answer the query.
- The answers are appropriate what the user queries.

Advantages

- User does not have to go personally to college office for the enquiry.
- This application enables the students to be updated with college cultural activities.
- This application saves time for the student as well as teaching and non-teaching staffs.
Chat bot can run on local computers and phones, though most of the time it is accessed through the internet.
- Chat bot is typically perceived as engaging software entity which humans can talk to. It can be interesting, inspiring and intriguing.
- It appears everywhere, from old ancient HTML pages to modern advanced social networking websites.
- It runs from standard computers to fashionable smart mobile devices.
- Chat bots talk in almost every major language.
- It is an extremely helpful and useful system for disabled people

2.3 FEASIBILITY STUDY

An important outcome of the preliminary investigation is the determination that the system requested is feasible. A feasibility study is carried out to select the best system that meets the performance requirements. A feasibility study is both necessary and prudent to evaluate the feasibility of the project at the earliest possible time.

Three key considerations involved in the feasibility analysis are,

- **Economical Feasibility**
- **Technical Feasibility**
- **Operational Feasibility**

2.3.1 Economical Feasibility

Economic feasibility is the cost and logistical outlook for this project. Thus, the developed system as well within the budget and this was achieved because most of the technologies used are freely available. The economical study analyses data to determine whether the cost ultimately profitable to the user. This project requires the historical data.

So it is not a difficult task to any user to analyze the patterns or predicting the sales. Due to this, it is economically feasible.

2.3.2 Technical Feasibility

Technical feasibility is one of the first studies that must be conducted after the project has been identified. Any system developed must not have a high demand on the available technical resources. This leads to high demands on the available technical resources. This lead to high demands being placed on the client. This application has been developed with python, where it provides more general approach to data science. It is a general purpose language with a readable syntax. A panda is the Python Data Analysis Library, used for everything from importing data from Excel spreadsheets to processing sets for time-series analysis.

2.3.3 Operational Feasibility

Assessing operational feasibility is to gain an understanding of whether the proposed system is to solve the User problems, or take advantage of the opportunities or not. Is important to understand how the new systems will fetch into the current day-to-day operations of the organization. Operational feasibility studies are generally utilized to Process, Evaluation, Implementation, and Resistance. Python also enables developers to roll out programs and get prototypes running, making the development process much faster. Once a project is on its way to becoming an analytical tool or application, it can be ported to more sophisticated languages such as Java or C if necessary.

CHAPTER 3

SYSTEM SPECIFICATIONS

3.1 HARDWARE SPECIFICATIONS

- Processor : I3 Pentium
- RAM : 2GB
- ROM : 320GB
- Keyboard : 108 Enhanced
- Monitor : HP 15" Monitor
- Mouse : Logitech

3.2 SOFTWARE SPECIFICATIONS

- Operating System : Windows 10
- Front End : Python
- Software : Visual Studio Code 1.43.2

CHAPTER 4

SOFTWARE DESCRIPTION

4.1 FRONT END

Python

- Python is an open source programming language that was made to be easy-to-read and powerful. A Dutch programmer named Guido van Rossum made Python in 1991.
- Python is an interpreted language. Interpreted languages do not need to be compiled to run. A program called an interpreter runs Python code on almost any kind of computer. This means that a programmer can change the code and quickly see the results. This also means Python is slower than a compiled language like C, because it is not running machine code directly
- Python is a good programming language for beginners. It is a high-level language, which means a programmer can focus on what to do instead of how to do it.
- Writing programs in Python takes less time than in some other languages. Python drew inspiration from other programming languages like C, C++, Java, Perl, and Lisp.
- Python has a very easy-to-read syntax. Some of Python's syntax comes from C, because that is the language that Python was written in. But Python uses whitespace to delimit code: spaces or tabs are used to organize code into groups. This is different from C. In C, there is a semicolon at the end of each line and curly braces ({}) are used to group code. Using whitespace to delimit code makes Python a very easy-to-read language.

Features & Specifications

Python provides lots of features that are listed below.

Easy to Learn and Use

Python is easy to learn and use. It is developer-friendly and high level programming language.

Expressive Language

Python language is more expressive means that it is more understandable and readable.

Interpreted Language

Python is an interpreted language i.e. interpreter executes the code line by line at a time. This makes debugging easy and thus suitable for beginners.

Cross-platform Language

Python can run equally on different platforms such as Windows, Linux, Unix and Macintosh etc. So, we can say that Python is a portable language.

Free and Open Source

Python language is freely available .The source-code is also available. Therefore it is open source.

Object-Oriented Language

Python supports object oriented language and concepts of classes and objects come into existence.

Extensible

It implies that other languages such as C/C++ can be used to compile the code and thus it can be used further in our python code.

Large Standard Library

Python has a large and broad library and provides rich set of module and functions for rapid application development.

GUI Programming Support

Graphical user interfaces can be developed using Python.

Integrated

It can be easily integrated with languages like C, C++, JAVA etc.

4.2 BACK END

Python Runtime

- 1 To make Python available, the CPython team has compiled Windows installers (MSI packages) with every release for many years. These installers are primarily intended to add a per-user installation of Python, with the core interpreter and library being used by a single user. The installer is also able to install for all users of a single machine, and a separate ZIP file is available for application-local distributions.
- 2 Python release only supports a Windows platform while Microsoft considers the platform under extended support. This means that Python 3.7 supports Windows Vista and newer. If user require Windows XP support then they need to install Python

3 Four Python 3.7 installers are available for download - two each for the 32-bit and 64-bit versions of the interpreter. The *web installer* is a small initial download, and it will automatically download the required components as necessary. The offline installer includes the components necessary for a default installation and only requires an internet connection for optional features.

- User will *not* need to be an administrator (unless a system update for the C Runtime Library is required or install the Python Launcher for Windows for all users) Python will be installed into user directory
- The Python Launcher for Windows will be installed according to the option at the bottom of the first page
- The standard library, test suite, launcher and pip will be installed
- If selected, the install directory will be added to user PATH
- Shortcuts will only be visible for the current user

Selecting “Customize installation” will allow user to select the features to install, the installation location and other options or post-install actions. To install debugging symbols or binaries, user need to use this option.

To perform an all-users installation, you should select “Customize installation”. In this case:

- User may be required to provide administrative credentials or approval
- Python will be installed into the Program Files directory
- The Python Launcher for Windows will be installed into the Windows directory
- Optional features may be selected during installation
- The standard library can be pre-compiled to bytecode
- If selected, the install directory will be added to the system PATH
- Shortcuts are available for all users

Known Issues

Currently, the py.exe launcher cannot be used to start Python when it has been installed from the Microsoft Store. Because of restrictions on Microsoft Store apps, Python scripts may not have full write access to shared locations such as TEMP or the registry. Instead, it will write to a private copy. If user scripts must modify the shared locations, user need to install the full installer.

Python Execution Environment

Setting Up Path

Programs and other executable files can be in many directories, so operating systems provide a search path that lists the directories that the OS searches for executables. The path is stored in an environment variable, which is a named string maintained by the operating system. This variable contains information available to the command shell and other programs.

The path variable is named as PATH in Unix or Path in Windows (Unix is case sensitive; Windows is not). In Mac OS, the installer handles the path details. To invoke the Python interpreter from any particular directory, user must add the Python directory to their path.

Setting Path At Unix/Linux

To add the Python directory to the path for a particular session in Unix –
In the csh shell – type `setenv PATH "$PATH:/usr/local/bin/python"` and press Enter.
In the bash shell (Linux) – type `export PATH="$PATH:/usr/local/bin/python"` and press

Enter.

In the sh or ksh shell – type PATH="\$PATH:/usr/local/bin/python" and press Enter.

Note – /usr/local/bin/python is the path of the Python directory

Setting Path at Windows

To add the Python directory to the path for a particular session in Windows – At the command prompt – type path %path%;C:\Python and press Enter.

Note – C:\Python is the path of the Python directory

Python Environment Variables Pythonpath

It has a role similar to PATH. This variable tells the Python interpreter where to locate the module files imported into a program. It should include the Python source library directory and the directories containing Python source code. PYTHONPATH is sometimes preset by the Python installer.

Pythonstartup

It contains the path of an initialization file containing Python source code. It is executed every time you start the interpreter. It is named as .pythonrc.py in Unix and it contains commands that load utilities or modify PYTHONPATH

Python caseok

It is used in Windows to instruct Python to find the first case-insensitive match in an import statement. Set this variable to any value to activate it.

Python home

It is an alternative module search path. It is usually embedded in the PYTHONSTARTUP or PYTHONPATH directories to make switching module libraries easy.

Running Python

There are three different ways to start Python –

Interactive Interpreter

User can start Python from Unix, DOS, or any other system that provides a command-line interpreter or shell window.

Enter python the command line.

Start coding right away in the interactive interpreter.

\$python #Unix/Linux or python%#Unix/Linux or

C:>python # Windows/DOS

Integrated Development Environment

User can run Python from a Graphical User Interface (GUI) environment as well, if user have a GUI application on system that supports Python.

- Unix – IDLE is the very first Unix IDE for Python.
- Windows – PythonWin is the first Windows interface for Python and is an IDE with a GUI.
- Macintosh – The Macintosh version of Python along with the IDLE IDE is available from the main website, downloadable as either MacBinary or BinHex'd files.
- If user are not able to set up the environment properly, then user can take help from system admin. Make sure the Python environment is properly set up and working perfectly fine.

AIML :

AIML stands for Artificial Intelligence Modelling Language.

AIML is an XML based markup language meant to create artificial intelligent applications. AIML makes it possible to create human interfaces while keeping the implementation simple to program, easy to understand and highly maintainable. That enables A.L.I.C.E and other bots that are based on A.L.I.C.E to communicate with humans.

Also see: AI, A.L.I.C.E, Chatbot

Python Libraries

- Pandas
- Numpy
- Tkinter
- Smtplib
- Pygame
- Wolfram Alpha

Pandas

Pandas is an open-source, BSD-licensed Python library providing high-performance, easy-to-use data structures and data analysis tools for the Python programming language. Python with Pandas is used in a wide range of fields including academic and commercial domains including finance, economics, Statistics, analytics, etc.

Key Features of Pandas

- Fast and efficient DataFrame object with default and customized indexing.
- Tools for loading data into in-memory data objects from different file formats.
- Data alignment and integrated handling of missing data.
- Reshaping and pivoting of date sets.

- Label-based slicing, indexing and subsetting of large data sets.
- Columns from a data structure can be deleted or inserted.
- Group by data for aggregation and transformations.
- High performance merging and joining of data.
- Time Series functionality.

NumPy

NumPy, which stands for Numerical Python, is a library consisting of multidimensional array objects and a collection of routines for processing those arrays. Using NumPy, mathematical and logical operations on arrays can be performed. This tutorial explains the basics of NumPy such as its architecture and environment. It also discusses the various array functions, types of indexing, etc

Operations using NumPy

Using NumPy, a developer can perform the following operations –

- Mathematical and logical operations on arrays.
- Fourier transforms and routines for shape manipulation.
- Operations related to linear algebra. NumPy has in-built functions for linear algebra and random number generation.

NumPy – A Replacement for MatLab

NumPy is often used along with packages like SciPy (Scientific Python) and Matplotlib(plotting library). This combination is widely used as a replacement for MatLab, a popular platform for technical computing. However, Python alternative to MatLab is now seen as a more modern and complete programming language.

Tkinter

Tkinter is python's standard GUI (graphical user interface) package. It is the most commonly used toolkit for GUI programming in python programming Language.

It is the standard GUI toolkit for Python. Fredrik Lundh wrote it. For modern Tk

binding. Tkinter is implemented as a Python wrapper for the Tcl Interpreter embedded within the interpreter of Python. Tk provides the following widgets:

- **Button**
- **Canvas**
- **combo-box**
- **frame**
- **level**
- **check-button**
- **entry**
- **level-frame**
- **menu**
- **list – box**

- menu button
- message
- tk_optoinMenu
- progress-bar
- radio button
- scroll bar
- separator
- tree-view, and many more.

Pygame

Python is the most popular programming language or nothing wrong to say that it is the next-generation programming language. In every emerging field in computer science, Python makes its presence actively. Python has vast libraries for various fields such as Machine Learning (Numpy, Pandas, Matplotlib), Artificial intelligence (Pytorch, TensorFlow), and Game development (Pygame, Pyglet).

- Pygame is a cross-platform set of Python modules which is used to create video games.
- It consists of computer graphics and sound libraries designed to be used with the Python programming language.
- Pygame was officially written by Pete Shinners to replace PySDL.
- Pygame is suitable to create client-side applications that can be potentially wrapped in a standalone executable.
- Pygame uses the Simple DirectMedia Layer (SDL) library,[a] with the intention of allowing real-time computer game development without the low-level mechanics of the C programming language and its derivatives. This is based on the assumption that the most expensive functions inside games can be abstracted from the game logic, making it possible to use a high-level programming language, such as Python, to structure the game.[5]
- Other features that SDL doesn't have include vector math, collision detection, 2d sprite scene graph management, MIDI support, camera, pixel-array manipulation, transformations, filtering, advanced freetype font support, and drawing.[11]

- Applications using pygame can run on Android phones and tablets with the use of pygame Subset for Android (pgs4a).[12] Sound, vibration, keyboard, and accelerometer are supported on Android.

Machine Learning

Machine Learning is a system that can learn from example through self-improvement and without being explicitly coded by programmer. The breakthrough comes with the idea that a machine can singularly learn from the data (i.e., example) to produce accurate results.

Machine learning combines data with statistical tools to predict an output. This output is then used by corporate to makes actionable insights. Machine learning is closely related to data mining and Bayesian predictive modeling. The machine receives data as input, use an algorithm to formulate answers.

A typical machine learning tasks are to provide a recommendation. For those who have a Netflix account, all recommendations of movies or series are based on the user's historical data. Tech companies are using unsupervised learning to improve the user experience with personalizing recommendation.

Machine learning is also used for a variety of task like fraud detection, predictive maintenance, portfolio optimization, automatize task and so on.

Natural language processing (NLP)

Natural language processing (NLP) is the ability of a computer program to understand human language as it is spoken. NLP is a component of artificial intelligence (AI).

The development of NLP applications is challenging because computers traditionally require humans to "speak" to them in a programming language that is precise, unambiguous and highly structured, or through a limited number of clearly enunciated voice commands. Human speech, however, is not always precise -- it is often ambiguous and the linguistic structure can depend on many complex variables, including slang, regional dialects and social context.

Machine Learning & Artificial Intelligence

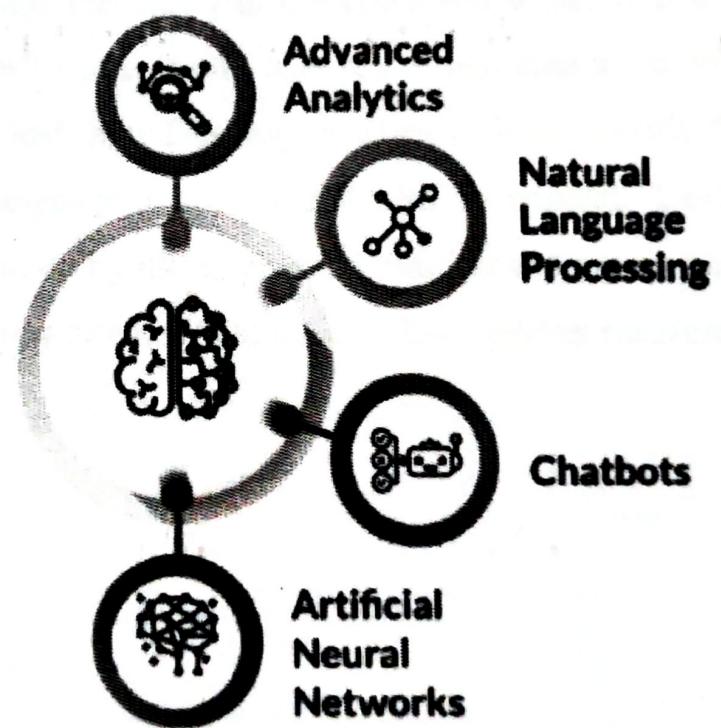


Figure 4.3 Machine Learning & Artificial Intelligence

CHAPTER 5

PROJECT DESCRIPTION

5.1 PROBLEM DEFINITION

This system is voice-based personal assistant has always seemed a little out of place in the enterprise. It's a useful tool for search, for reminders, and to write the note just by speaking it up. Desktop assistant is to create voice apps for the intelligent assistant. When user need to open any other application, he/she can use the command open. E.g. Open Notepad, File explorer, google chrome, this will help to open the applications. When user want to write the message can use command write. And to for searching purpose search command can be use. It will also restart and shutdown on the command. Interactions between a user and your Desktop assistant skill are mostly free-form, so assistant must understand language naturally and also in context. Desktop assistant determines what a user wants to do by identifying the user intent from spoken or textual input by utterance. The intent maps utterances to actions that Desktop assistant.

5.2 MODULE LIST

- User
- Bot Chat
- Information
- Text to Speech

5.3 MODULES DESCRIPTION

User

- **Speech to Text:** User will ask the computer to run command by giving input as speech
- **Command Execution:** Based on command received from the user, system will execute the command (if available). Eg. Greetings
- **Text to Speech:** Once a command is received, application speaks the command which make user experience more interactive with the system

BotChat

- To make a conversation between both human and machine.
- The machine has been embedded knowledge to identify the sentences and making a decision itself as response to answer a question
- User can chat with the bot it implies as if enquiring to the college person about college related activities.

Information

- It can answer the questions asked by the user whatever question relevant to college it search and gives that particular college information.

5.4 DATA FLOW DIAGRAM

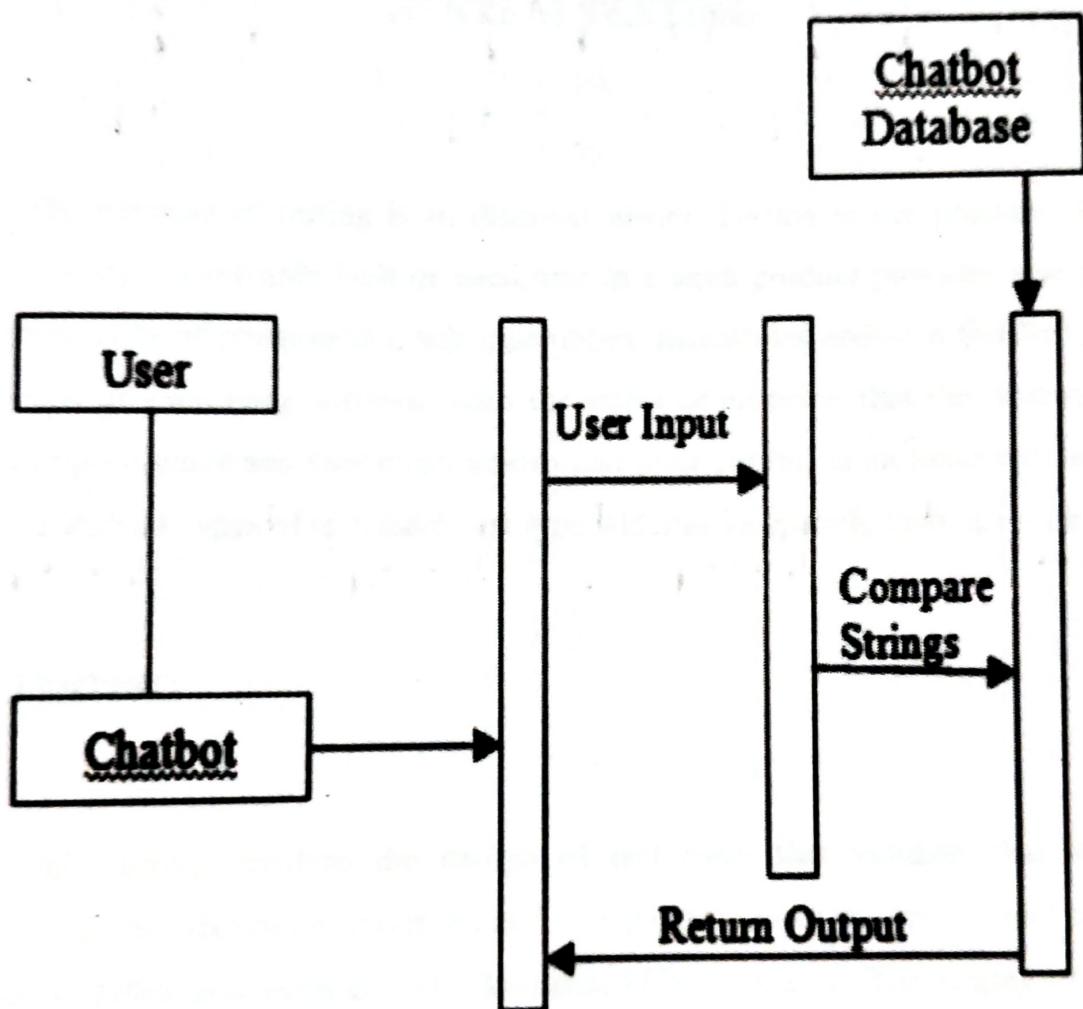


Figure 5.4 Chatbot model

CHAPTER 6

SYSTEM TESTING

The purpose of testing is to discover errors. Testing is the process of trying to discover every conceivable fault or weakness in a work product provides a way to check the functionality of components, sub-assemblies, assemblies and/or a finished product is the process of exercising software with the intent of ensuring that the Software system meets s requirements and user expectations and does not fail in an unacceptable manner. There are various types of test. Each test type addresses a specific testing requirement

6.1 UNIT TESTING

Unit testing involves the design of test cases that validate that the internal program logic is functioning properly, and that program input produces valid outputs. All decision branches and internal code flow should be validated. The testing of individual software units of the application .The project is done after the completion of an individual un before integration. This is a structural testing, that relies on knowledge of s construction and is invasive. Unit tests perform basic tests at component level and test a specific business process, application, and/or system configuration. Unit tests ensure that each unique path of a business process performs accurately to the documented specifications and contains clearly defined inputs and expected results

6.2 FUNCTIONAL TESTING

Functional tests provide systematic demonstrations that functions tested are available as specified by the business and technical requirements, system documentation, and user manuals.

Functional testing is centered on the following items:

- Valid Input** : identified classes of valid input must be accepted. Invalid
- Input** : identified classes of invalid input must be rejected.
- Functions** : identified functions must be exercised.
- Output** : identified classes of application outputs must be exercised.
- Systems/Procedures**: interfacing systems or procedures must be invoked.

6.3 SYSTEM TESTING

System testing ensures that the entire integrated software system meets requirements. Tests a configuration to ensure known and predictable results. An example of system testing is the configuration oriented system integration test. System testing is based on process descriptions and flows, emphasizing pre-driven process links and integration points

6.4 INTEGRATION TESTING

Integration tests are designed to test integrated software components to determine if the user actually run as one program. Testing is event driven and is more concerned with the basic outcome of screens or fields. Integration tests demonstrate that although the components were individually satisfaction, as shown by successfully unit testing, the combination of components is correct and consistent. Integration testing is specifically aimed at exposing the problems that arise from the combination of components.

CHAPTER 7

SYSTEM IMPLEMENTATION

Implementation is the stage of the project where the theoretical design is sent into a working system. If the implementation access is not carefully planned and controlled Implementation includes all those activities that take place to convert from old system to new one. The new system may be totally new, replacing a testing manual or automated system or may be a major modification to an existing system. Proper implementation is essential to provide a reliable system to meet the organization requirement. Successful implementation may not guarantee the improvement of the organization using the new system, but improper installation will prevent

The system can be implemented only after thorough testing is done and found to be working according to the specifications. The system will personnel check the feasibility of the system

The most crucial stage is achieving a new successful system and giving confidence on the new system for the user that will work efficiently and effectively. involves careful planning, investigation of the current system and s constraints on implementation, the design of methods to achieve the changeover. The more complex the system being implemented, the more involved will be the system analysis and the design effort required just for implementation

CHAPTER 8

CONCLUSION AND FUTURE ENHANCEMENTS

8.1 CONCLUSION

The main objectives of the project were to develop an algorithm that will be used to identify answers related to user submitted questions. To develop a database were all the related data will be stored and to develop a web interface. The web interface developed had two parts, one for simple users and one for the administrator. A background research took place, which included an overview of the conversation procedure and any relevant chat bots available. A database was developed, which stores information about questions, answers, keywords, logs and feedback messages.

An evaluation took place from data collected by potential students of the University. Also after received feedback from the first deployment, extra requirements were introduced and implemented. The more a person interacts with voice-activated devices, the more trends, and patterns the system identifies based on the information it receives. Then, this data can be utilized to determine user preferences and tastes, which is a long-term selling point for making a home smarter. Google and Amazon are looking to integrate voice-enabled artificial intelligence capable of analyzing and responding to human emotion.

8.2 FUTURE ENHANCEMENTS

- Face Detection and Face Recognition
- Set up more Voice Terminals
- Make to learn more new skills on its own
- To make it available to the world

CHAPTER 9

APPENDIX

9.1 SAMPLE SOURCE CODE

```
from flask import Flask, render_template
from flask_socketio import SocketIO, emit
import chatbot_final
import pytsxs3

engine = pytsxs3.init()
voices = engine.getProperty('voices')

def speak(audio):
    print('Emma watson:', audio)
    engine.setProperty('voice', voices[len(voices) - 1].id)
    engine.say(audio)
    engine.runAndWait()

app = Flask(__name__)

app.config['SECRET_KEY'] = 'jsbcfsbfjefebw237u3gdbdc'
socketio = SocketIO(app)

@app.route('/')
def hello():
    return render_template('./ChatApp.html')

def messageReceived():
```

```

print( 'message was received!!!' )

@socketio.on( 'my eventes' )
def handle_my_custom_event( json1 ):
    import chatbot_final
    message = json1['message']
    answer=chatbot_final.chat(message)
    json1['answer'] = answer
    json1['bot']=""

    print( 'recived my event: ' + str(json1) )
    socketio.emit( 'my response', json1, callback=messageReceived )

if __name__ == '__main__':
    socketio.run( app, debug = True )

import nltk
from nltk.stem.lancaster import LancasterStemmer
stemmer = LancasterStemmer()

import numpy
import tensorflow
import random
import json
import pickle
import pytsx3

engine = pytsx3.init()
voices = engine.getProperty('voices')

def speak(audio):
    print('Emma watson:', audio)
    engine.setProperty('voice', voices[len(voices) - 1].id)

```

```
engine.say(audio)
engine.runAndWait()

nltk.download('punkt')
with open("intents.json") as file:
    data = json.load(file)

try:
    with open("data.pickle", "rb") as f:
        words, labels, training, output = pickle.load(f)
except:
    words = []
    labels = []
    docs_x = []
    docs_y = []

for intent in data["intents"]:
    for pattern in intent["patterns"]:
        wrds = nltk.word_tokenize(pattern)
        words.extend(wrds)
        docs_x.append(wrds)
        docs_y.append(intent["tag"])

    if intent["tag"] not in labels:
        labels.append(intent["tag"])

words = [stemmer.stem(w.lower()) for w in words if w != "?"]
words = sorted(list(set(words)))

labels = sorted(labels)

training = []
output = []
```

```
out_empty = [0 for _ in range(len(labels))]

for x, doc in enumerate(docs_x):
    bag = []

    wrds = [stemmer.stem(w.lower()) for w in doc]

    for w in words:
        if w in wrds:
            bag.append(1)
        else:
            bag.append(0)

    output_row = out_empty[:]
    output_row[labels.index(docs_y[x])] = 1

    training.append(bag)
    output.append(output_row)

training = numpy.array(training)
output = numpy.array(output)

with open("data.pickle", "wb") as f:
    pickle.dump((words, labels, training, output), f)

tensorflow.reset_default_graph()

net = tflearn.input_data(shape=[None, len(training[0])])
net = tflearn.fully_connected(net, 8)
net = tflearn.fully_connected(net, 8)
net = tflearn.fully_connected(net, len(output[0]), activation="softmax")
net = tflearn.regression(net)
```

```
model = tflearn.DNN(net)

try:
    model.load("model.tflearn")
except:
    model.fit(training, output, n_epoch=1000, batch_size=8, show_metric=True)
    model.save("model.tflearn")

def bag_of_words(s, words):
    bag = [0 for _ in range(len(words))]

    s_words = nltk.word_tokenize(s)
    s_words = [stemmer.stem(word.lower()) for word in s_words]

    for se in s_words:
        for i, w in enumerate(words):
            if w == se:
                bag[i] = 1

    return numpy.array(bag)

def chat(msg):
    #print("Start talking with the bot (type quit to stop)!")
    #while True:
    print(msg)
    #inp = input("You: ")
    inp = msg
    if inp.lower() == "quit":
        print("really working")

    results = model.predict([bag_of_words(inp, words)])(0)
    results_index = numpy.argmax(results)
    tag = labels[results_index]
```

```

if results[results_index] > 0.7:
    for tg in data["intents"]:
        if tg['tag'] == tag:
            responses = tg['responses']

    return (random.choice(responses))
else:
    answer="I don't understand so plz ask another question"

return (answer)

```

```

<!DOCTYPE html>
<!-- saved from url=(0019)https://mkce.ac.in/ -->
<html lang="en"><head><meta http-equiv="Content-Type" content="text/html; charset=UTF-8">
<!-- important for compatibility charset -->

<meta http-equiv="x-ua-compatible" content="ie=edge">

<title>M.Kumarasamy College of Engineering, NAAC Accredited Autonomous Institution, Karur, Tamilnadu</title>

<meta name="keywords" content="M.Kumarasamy College of Engineering, NAAC Accredited Autonomous Institution, Karur, Tamilnadu, Best engineering college in karur,Tamilnadu, 100% placement,Best college in Karur, Engineering colleges in Tamilnadu. ">
<meta name="description" content="M.Kumarasamy College of Engineering established in the year 2000 by M.Kumarasamy Health and Educational Trust with a vision to provide technical education for all sections of the society has made rapid strides on all fronts to achieve academic excellence in a short span of time.

The college has earned a remarkable position in the field of technical education through the untiring efforts of the visionary management, competent faculty members and stupendous students.">
<meta name="author" content="Knock the globe Technologies, karur, Tamilnadu.">

```

```

<!-- important for responsiveness remove to make your site non responsive. -->
<meta name="viewport" content="width=device-width, initial-scale=1">

<!-- FavIcon -->
<link rel="shortcut icon" type="image/x-icon" href="https://mkce.ac.in/images/favicon.png">
<link rel="stylesheet" href="https://use.fontawesome.com/releases/v5.6.3/css/all.css"
integrity="sha384-UHrtZLI+pbxtHCWpIt77Bi1L4ZtiqrqD80Kn4Z8NTSRyMA2Fd33n5dQ8IWUE00s/"
crossorigin="anonymous">

<!-- Animation CSS -->
<link href="{{url_for('static',filename='css/animate.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/font-awesome.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/font-awesome.min.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/foundation.min.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/hover.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/layers.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/lightbox.min.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/navigation.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/owl.carousel.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/style.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/ekko-lightbox.css')}}" rel="stylesheet">
<link href="{{url_for('static',filename='css/settings.css')}}" rel="stylesheet">

<!-- Google Fonts For Stylesheet -->
<link href="/static/css" rel="stylesheet" type="text/css">

<style type="text/css">
.txt-cap{
    text-transform: capitalize;
}
.header li{
    list-style-type: none;
}
.fs-16{

```

```
font-size: 16px;  
}  
.fw-700{  
    font-weight: 700;  
}  
p{  
    text-align: justify;  
    font-family: sans-serif;  
}  
.ln-height-35{  
    line-height: 35px;  
}  
.text-center{  
    text-align: center;  
}  
.float-right{  
    float: right!important;  
}  
.f-7em{  
    font-size: 0.76em;  
}  
.textdec-underline{  
    text-decoration: underline;  
}  
.tit{  
    color: blueviolet;  
    font-weight: 700;  
    font-family: -webkit-pictograph;  
    margin-bottom: 10px;  
    padding: 10px;  
}  
.fa-10{  
    font-size: 10px;  
}
```

```
.fw-300{  
    font-weight:500;  
}  
  
h6,a {  
    font-family: unset !important;  
}  
  
.lnheight-45{  
    line-height: 44px;  
}  
  
.lnheight-30{  
    line-height: 30px;  
}  
  
.bg{  
    background-color: #174873;  
    color: white;  
}  
  
.color-red{  
    color: red;  
}  
  
.latest-img{  
    float: left;  
    overflow: hidden;  
    border-radius: 50%;  
    -moz-border-radius: 50%;  
    -webkit-border-radius: 100%;  
    margin: 0px 20px 0px 0px;  
}  
  
.bullet li{  
    list-style-type: disc !important;  
}  
  
.owl-nav .owl-prev, .owl-nav .owl-next{  
    width: 40px !important;  
    height: 30px !important;  
    border-radius: 8px !important;  
}
```

```
margin-left: 0px !important;
border: 1px solid #146db4 !important;
background-color: #156eb4 !important;
color: #ffffff !important;
}

.owl-next:hover, .owl-prev:hover{
    background-color: #e79800 !important;
    border: 1px solid #e79800 !important;
}

.latest-li a, .latest-li p, .latest-li h1, .latest-li h2, .latest-li h3, .latest-li h4, .latest-li h5, .latest-li h6{
    color: white;
}

#html5-elem-wrap{
    height: 515px !important;
}

.blink-one {
    animation: blinker-one 1s linear infinite;
}

@keyframes blinker-one {
    0% { opacity: 0; }
}

</style>

<meta class="foundation-mq">
<style type="text/css">
*{
    -webkit-user-select: text !important;
    -moz-user-select: text !important;
    -ms-user-select: text !important;
    user-select: text !important;
}
</style>
<style type="text/css">
*{
    -webkit-user-select: text !important;
}
```

```

    -moz-user-select: text !important;
    -ms-user-select: text !important;
    user-select: text !important;
} </style> </head>

```

<body>

<!-- Page Preloader -->

<div id="loading" class="loaded"></div>

<!-- Page Preloader Ends /-->

<!-- Main Container -->

<div class="main-container">

<!-- Top Bar Starts -->

<div class="topBar">

<div class="row">

<!-- <div class="large-7 medium-7 small-12 columns topbar-new text-left" style="background: #174873;">

<ul class="menu">

NIRF

IEDC

NAAC & IQAC

IPR/TECH TRANSFER

E-PG PATHSHALA

WEBMAIL

</div> -->

<div class="large-12 medium-5 small-12 columns pull-right">

<ul class="menu text-right">

 COUNSELLING CODE :

```

2608 </font></span></b> </li>
    <!-- <li><i class="fa fa-envelope"></i>mkce@mkce.ac.in</li> -->
        <li class="social"><a href="https://www.facebook.com/mkcekarur/" target="_blank"></a></li>
            <li class="social"><a href="https://twitter.com/mkcekarur/" target="_blank"></a></li>
            <!-- <li class="social"><a href="#"><i class="fa fa-instagram"></i></a></li> -->
                <!--li class="social"><a href="https://twitter.com/mkcekarur/" target="_blank"><i class="fa fa-google"></i></a></li-->

                    <li class="social"><a href="https://www.instagram.com/mkcekarur" target="_blank"></a></li>
                    <li class="social"><a href="https://www.linkedin.com/in/mkce" target="_blank"></a></li>
                </ul>
            </div><!-- Right column Ends /-->
        </div><!-- Row ends /-->
    </div>
    <!-- Top bar Ends /-->

    <!-- Header Starts -->
    <div class="header" style="z-index: 999999;">
        <div class="row">
            <div class="medium-4 small-12 columns">
                <div class="logo">
                    <a href="https://mkce.ac.in/index.php">
                        
                </div>
            </div>
        </div>
    </div>

```

```

        </a>
    </div><!-- logo /-->
</div><!-- left Ends /-->

<div class="medium-8 small-12 columns nav-wrap">
    <!-- navigation Code STarts here.. -->
    <div class="top-bar">
        <div class="top-bar-title">
            <span data-responsive-toggle="responsive-menu" data-hide-for="medium"
style="display: none;">
                <a data-toggle=""><span class="menu-icon dark float-left"></span></a>
            </span>
        </div>

        <nav id="responsive-menu">
            <ul class="menu vertical medium-horizontal float-right dropdown" data-responsive-
menu="accordion medium-dropdown" role="menubar" data-dropdown-menu="wrahx5-dropdown-
menu">
                <!-- <li class="single-sub parent-nav"><a href="index-2.html">Home Page</a>
                    <ul class="child-nav menu vertical">
                        <li><a href="index-2.html">Home Version 1</a></li>
                        <li><a href="index2.html">Home Version 2</a></li>
                        <li><a href="header-style2.html">Header Style 2</a></li>
                        <li><a href="boxed.html">Boxed Layout</a></li>
                    </ul>
                </li> -->
                <li class="single-sub parent-nav is-dropdown-submenu-parent opens-right"
role="menuitem" aria-haspopup="true" aria-expanded="false" aria-label="About "><a
href="https://mkce.ac.in/" tabindex="0">About </a>
                    <ul class="child-nav menu vertical submenu is-dropdown-submenu first-sub" data-
submenu="" aria-hidden="true" role="menu">
                        <li style="width:300px; margin-top: 7px;" role="menuitem" class="is-submenu-
item is-dropdown-submenu-item"><a href="https://mkce.ac.in/vision.php">Vision, Mission &

```

Quality Policy

- <li style="width:300px;" role="menuitem" class="is-submenu-item is-dropdown-submenu-item">Why MKCE
 - <li style="width:300px;" role="menuitem" class="is-submenu-item is-dropdown-submenu-item">Management
 - <li style="width:300px;" role="menuitem" class="is-submenu-item is-dropdown-submenu-item">Infrastructure
 <!-- <li style="width:300px;">Ranking & Accreditation -->
 <li style="width:300px;" role="menuitem" class="is-submenu-item is-dropdown-submenu-item">MKCE Press
 <li style="width:300px;" role="menuitem" class="is-submenu-item is-dropdown-submenu-item">Career @ MKCE

- <li class="single-sub parent-nav is-dropdown-submenu-parent opens-right" role="menuitem" aria-haspopup="true" aria-expanded="false" aria-label="Academic">Academic
 - <ul class="child-nav menu vertical submenu is-dropdown-submenu first-sub" data-submenu="" aria-hidden="true" role="menu">
 <li class="single-sub parent-nav is-dropdown-submenu-parent is-submenu-item is-dropdown-submenu-item opens-right" style="margin-top: 7px;" role="menuitem" aria-haspopup="true" aria-expanded="false" aria-label="Departments">Departments
 <ul class="child-nav menu vertical submenu is-dropdown-submenu" data-submenu="" aria-hidden="true" role="menu">
 <!--<li class="single-sub parent-nav">UG Departments-->
 <!--<ul class="child-nav menu vertical">-->
 <!--CIVIL-->

<!---->

<!---->

<li class="single-sub parent-nav is-dropdown-

```

submenu-parent is-submenu-item is-dropdown-submenu-item opens-right" role="menuitem" aria-
haspopup="true" aria-expanded="false" aria-label="UG">><a href="https://mkce.ac.in/#">UG </a>



```

```

<!--<div class="testimonial" style="min-height:372px;"-->
  <!-- <div class="testimonial-thumb">-->
    <!-- -->
  <!-- </div>-->
  <!-- <div class="testimonial-detail">-->
    <!-- <h4>K.S.GANESH</h4>-->

    <!-- <p><b>Batch : 2013- 2017</b><br>-->
    <!-- <b>Company: APPLICATION DEVELOPER, INAUTIX PRIVATE
LIMITED, CHENNAI.</b> <br> -->
      <!-- Experienced staffs make more comfortable in learning. Our college well and good
in placement activities and trained the students -->
      <!-- to get placed in MNCs. Sports activities are good. Our college students
participated in various zonal, national and international games.-->
        <!-- Great atmosphere for Studying.-->
        <!-- </p>-->
      <!-- </div>-->
      <!-- <div class="clearfix"></div>-->
      <!--</div>-->
<!--<div class="testimonial" style="min-height:372px;"-->
  <!-- <div class="testimonial-thumb">-->
    <!-- -->
  <!-- </div>-->
  <!-- <div class="testimonial-detail">-->
    <!-- <h4>AFZAL .A</h4>-->

    <!-- <p><b>Batch : 2001-2005</b><br>-->
    <!-- <b>Company: OPERATIONS MANAGER, INDUS TOWERS</b> <br> -->
    <!-- The college has good infrastructure and the library is very useful for our studies.
Laboratory Facilities are also good. -->
      <!-- Parking and bus facilities are good. The college is giving much more importance
for our placement. Every year more than -->
      <!-- 100 companies are visiting our college. Learning over Knowing is followed well.-->

```

```
>

<!--    </p>-->
<!-- </div>-->
<!-- <div class="clearfix"></div>-->
<!--</div>-->
<!-- <div class="testimonial" style="min-height:372px;">-->
<!-- <div class="testimonial-thumb">-->
<!--    -->
<!-- </div>-->

<script type="text/javascript">
    document.oncontextmenu = null;
    document.onselectstart = null;
    document.ondragstart = null;
    document.onmousedown = null;
    document.body.oncontextmenu = null;
    document.body.onselectstart = null;
    document.body.ondragstart = null;
    document.body.onmousedown = null;
    document.body.oncut = null;
    document.body.oncopy = null;
    document.body.onpaste = null;
</script></body></html>
```

9.2 SCREENSHOTS

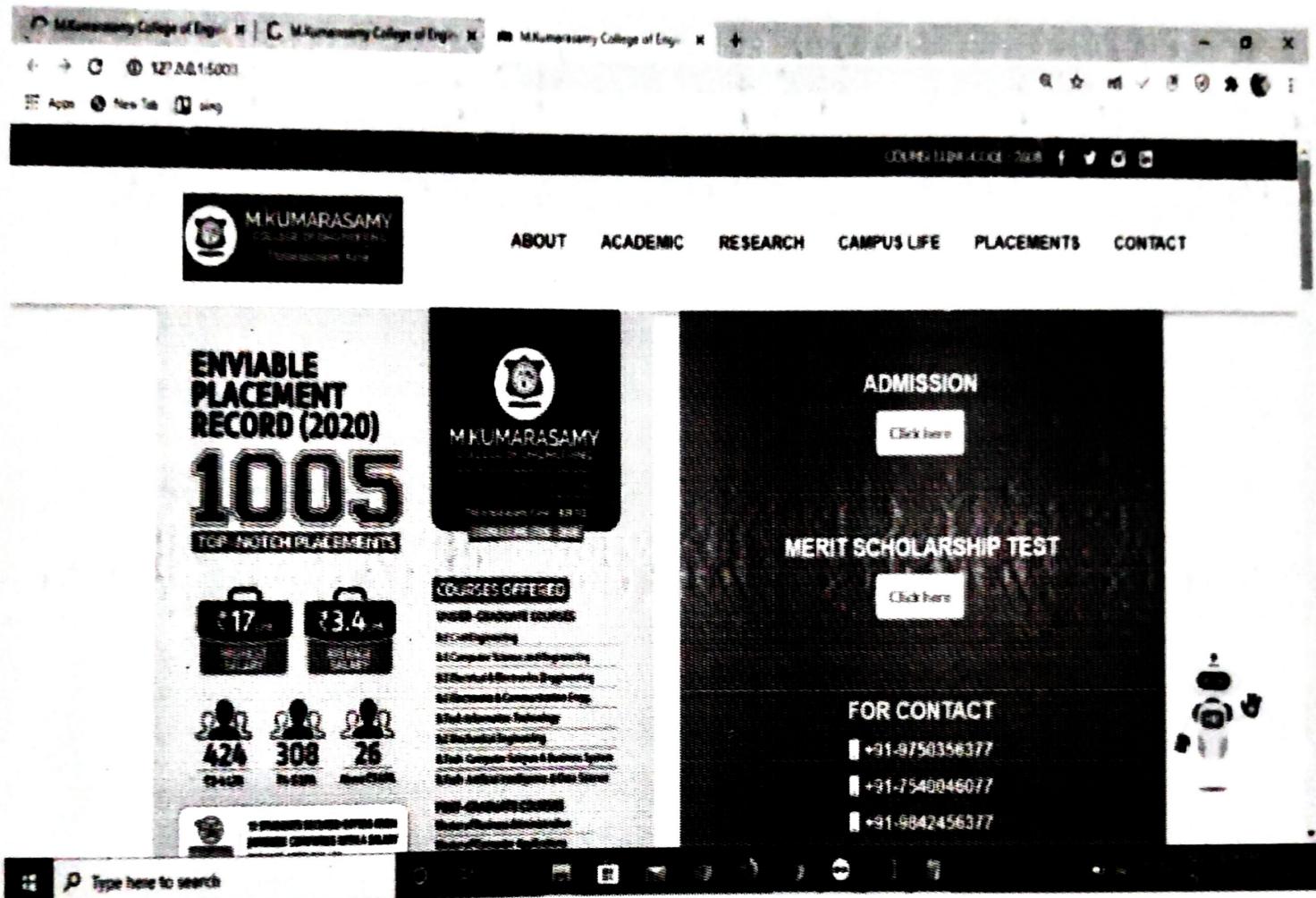


Figure 9.2.1 Home Page

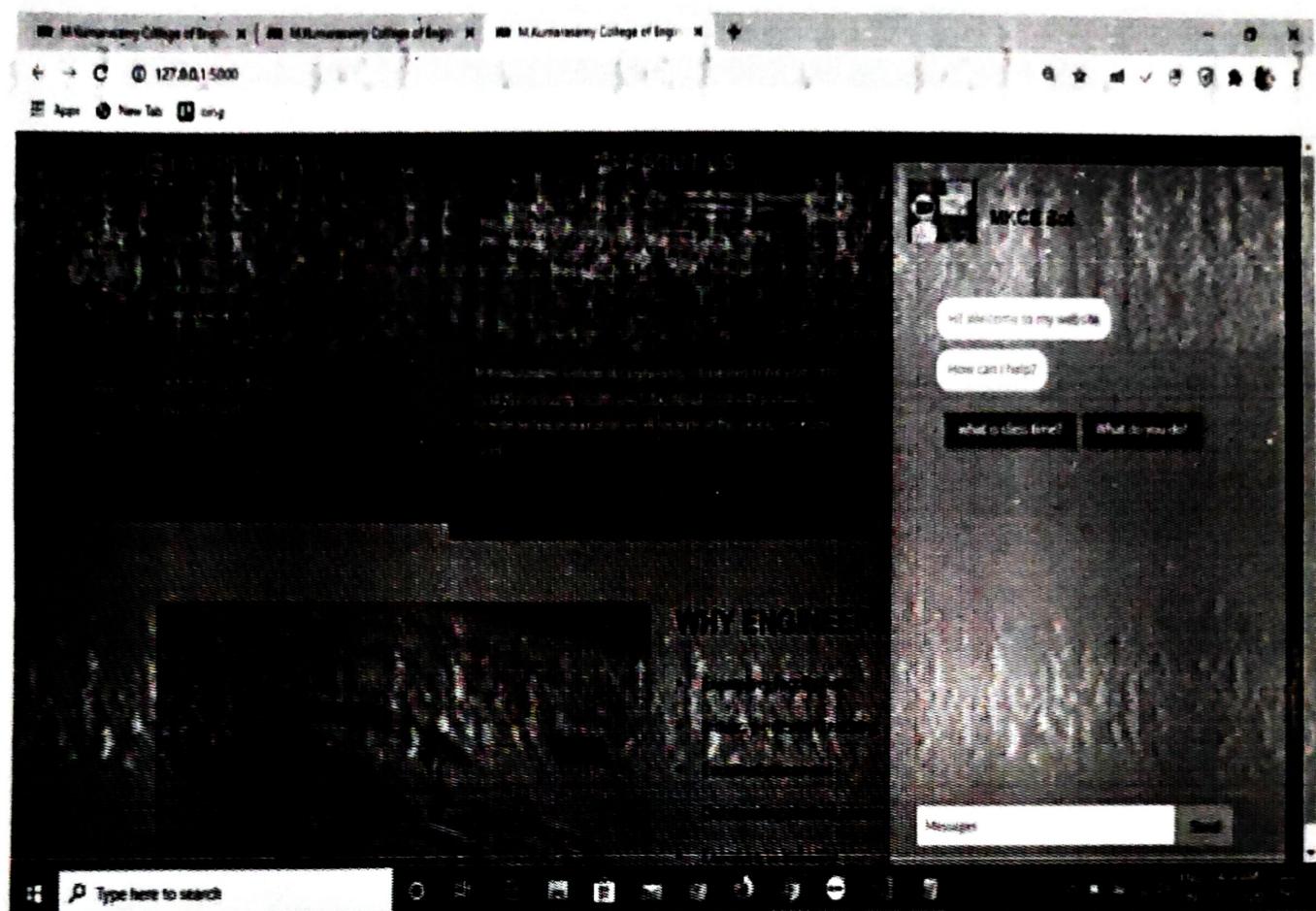


Figure 9.2.2 Web bot Module

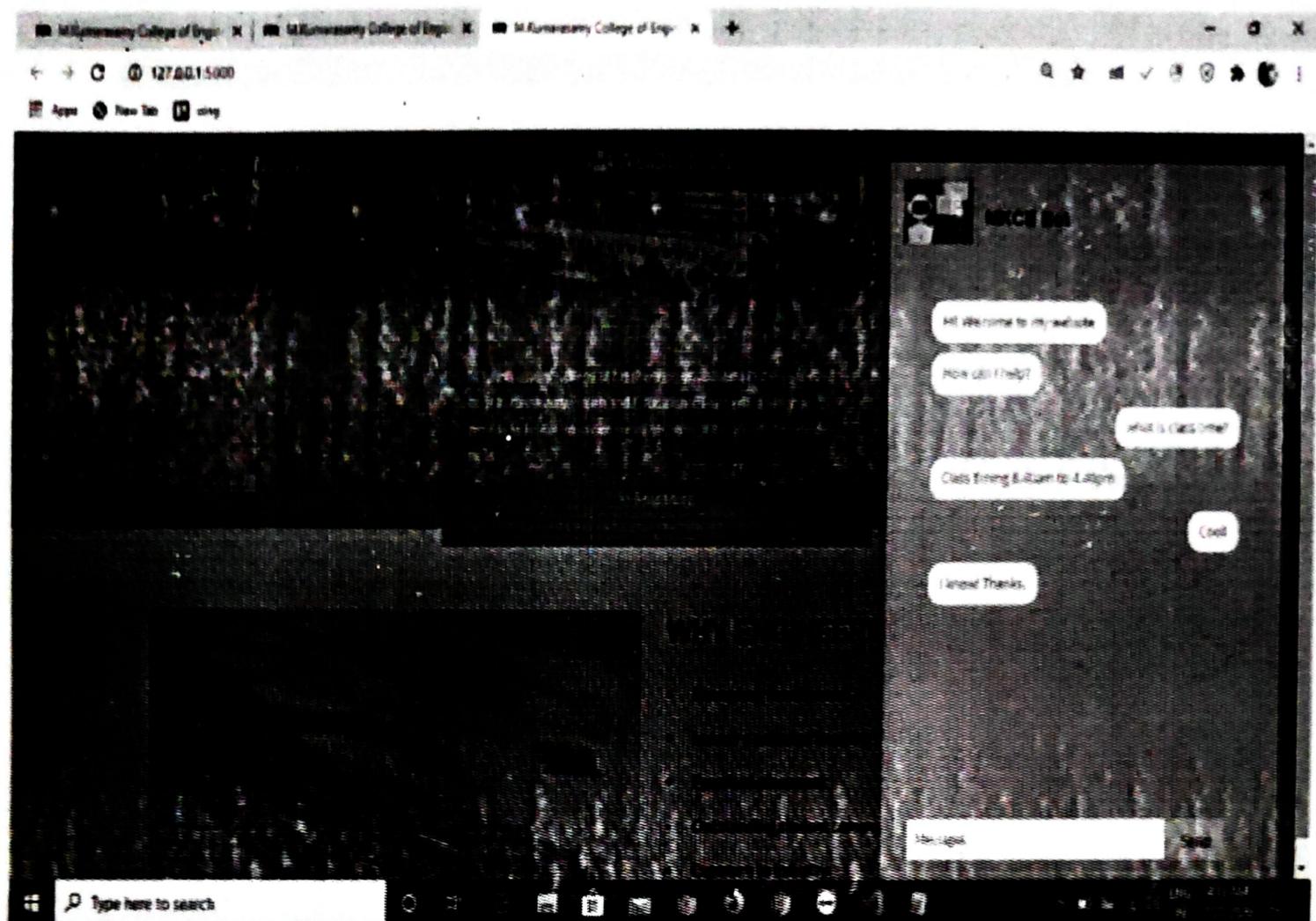


Figure 9.2.3 Information Module

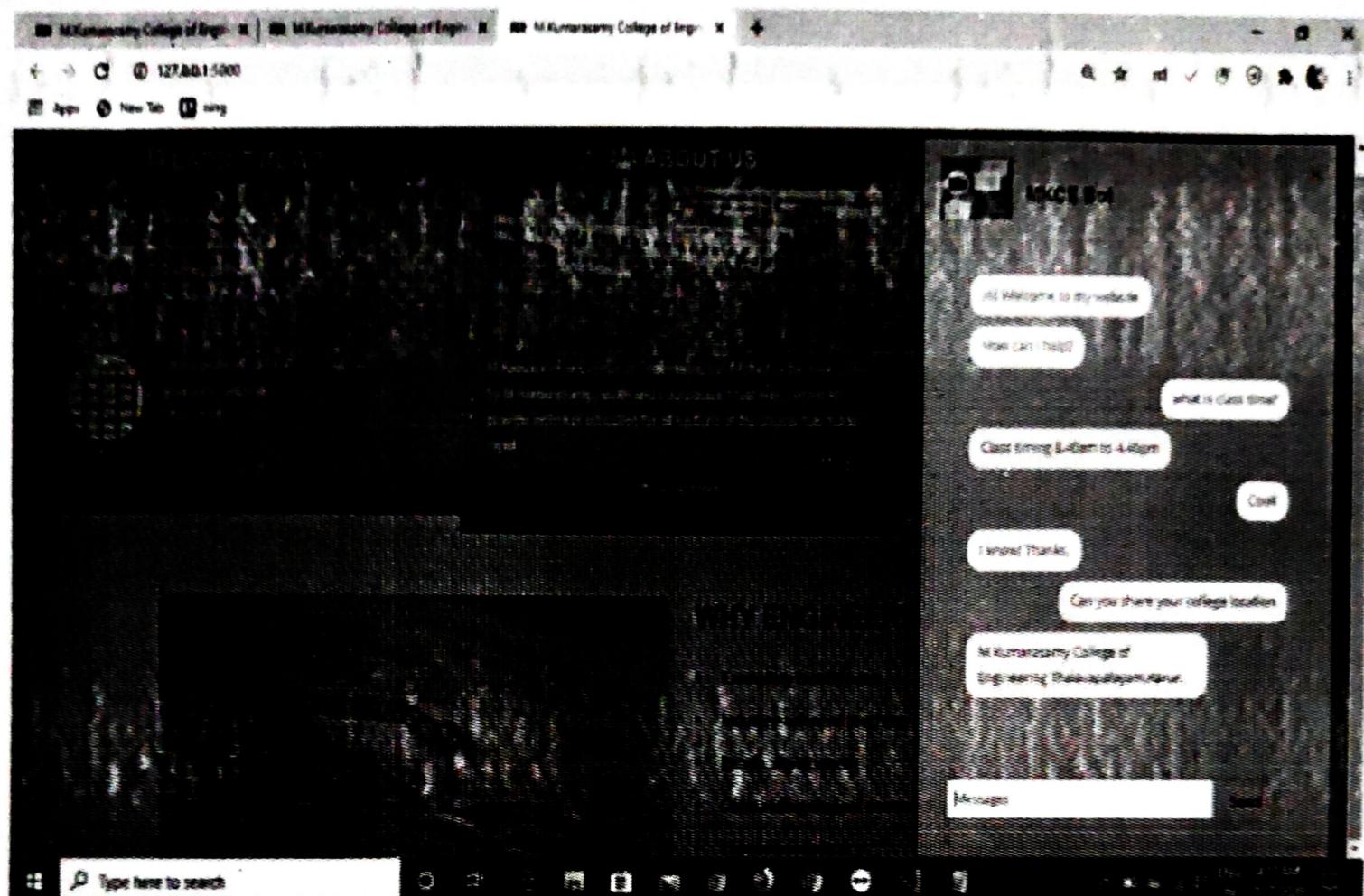


Figure 9.2.4 Location Module

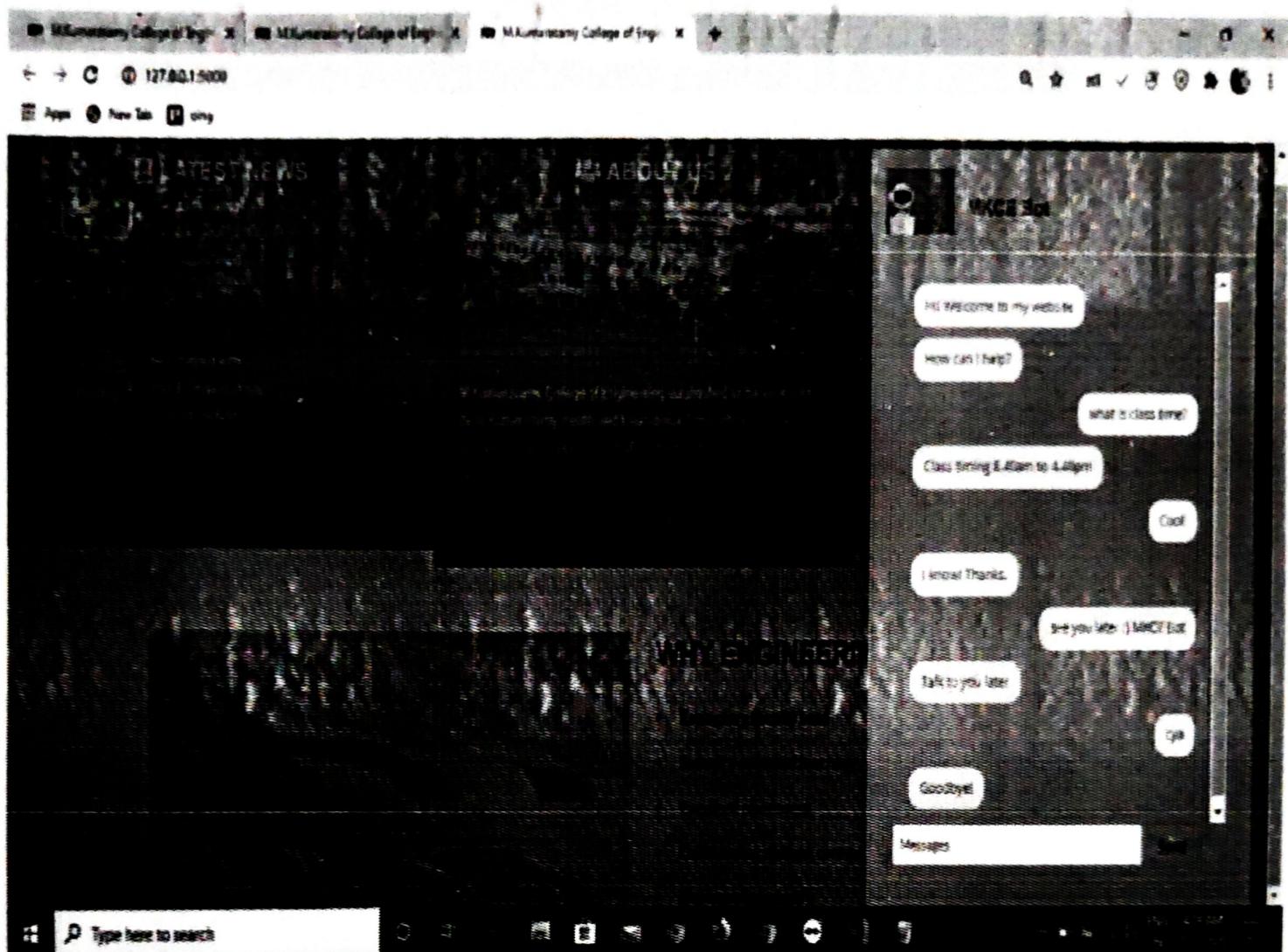


Figure 9.2.6 ChatBot Module

CHAPTER 10

REFERENCES

- [1] Emanuela Haller and Traian Rebedea, "Designing a Chat-bot that Simulates an Historical Figure", IEEE Conference Publications, July 2013.
- [2] Young Steve,A Review of Large-vocabulary Continuous-speech Recognition, IEEE SP Magazine, 13:45- 57, 1996, ISSN 1053-5888 .
- [3] Maja Pantic, Reinier Zwitserloot, and Robbert Jan Grootjans, "Teaching Introductory Artificial Intelligence Using Asimple Agent Framework", IEEE Transactions On Education, Vol. 48, No. 3, August 2005.
- [4] <https://github.com/parulnith/Building-a-Simple-Chatbot-in-Python-using-NLTK>
- [5] <https://www.edureka.co/blog/how-to-make-a-chatbot-in-python/>